

10/018198

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

JC13 Rec'd PCT/PTO 14 DEC 2001

**Applicant:** Wolfgang Ehrfeld  
**International Application No.:** PCT/EP00/05366  
**International Filing Date:** 10 June 2000  
**Title:** MICROMIXER  
**Agent's Reference No.:** FMW-RR-PCT-US  
**Date:** December 14, 2001

BOX PCT  
U.S. Receiving Office  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT**

Sir:

The present invention relates to known static micromixers that work according to the principle of multilamination allow for a rapid mixing by diffusion. The invention provides a means for substantially increasing the throughput of known micromixers. To this end, the inventive micromixer for mixing two or more reactants comprises microstructures that define mixer cells. Each of said mixer cells is provided with a feeding chamber which adjoins at least two groups of digital channels. Said channels intermesh with the digital channels of the groups adjoining the feeding channels in a comb-like manner, thereby producing mixing zones. Outlet ports are located above said mixing zones, said outlet ports extending perpendicularly to the digital channels and discharging the product. The inventive micromixer is especially useful for the large-scale production of mixtures, dispersions and emulsions.

As authorized and encouraged under 37 C.F.R. §1.97-1.99, applicant  
hereby cites as a means of complying with the duty of disclosure set forth in 37  
C.F.R. §1.56, the following patents and/or documents, copies enclosed, which the  
Examiner should consider with respect to the above-identified United States Patent  
Application:

U.S. DOCUMENTS		
PATENT/DOCUMENT NO.	DATE	INVENTOR
5,595,712	January 21, 1997	Harbster et al.
FOREIGN DOCUMENTS		
PATENT/DOCUMENT NO.	DATE	COUNTRY
0 495 169	July 22, 1992	EP
0 870 541	October 14, 1998	EP
WO 94/21372	September 29, 1994	WIPO

Copies of the publications are included for the express purpose of providing the Patent and Trademark Office with an ample opportunity to evaluate the same and to arrive at an independent assessment of their materiality, if any, with regard to the examination of the application.

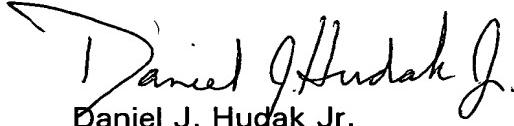
In reviewing the enclosed copies of the above publications, the Examiner is requested to ignore any underscoring or highlighting which may appear because such markings may or may not have any relationship to the subject matter of the above-identified application. The copies being submitted with this Information Disclosure Statement are the best copies available at this time.

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An examination of the present application considering the above documents is requested.

Respectfully submitted,

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Form PTO-1449 U.S. Department of Commerce  
Patent and Trademark Office

Atty. Docket No.:

Serial No.:

## LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

FMW-RR-PCT-US

Applicant:  
Wolfgang Ehrfeld et al.Filing Date:  
December 14, 2001

Group:

## U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing date if appropriate
	AA	5,595,712	January 21, 1997	Harbster et al.			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

## FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes No
	AL	0 495 169	July 22, 1992	EP			
	AM	0 870 541	October 14, 1998	EP			
	AN	WO 94/21372	September 29, 1994	WIPO			
	AO						
	AP						

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER

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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.